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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,516	12/03/2001	Masakazu Suzuki	826.1774	6506

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EXAMINER

CHEN, ALAN S

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/998,516	SUZUKI ET AL.	
	Examiner	Art Unit	
	Alan S Chen	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>5</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Should indicate the function or novelty of the invention, for example: "Device Driver Apparatus for I/O Device Simulation".

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by No. 5,357,519 to Martin et al. (hereafter Martin).

In reference to claim 1, Martin discloses a device driver apparatus (Fig. 1, element 100), which is connected to an initiator via a bus (Fig. 10), transmitting/receiving signal (see Table 3 in Column 7 for SC.SI pin/outs of apparatus connectors) to/from a process simulating an I/O device (Column 17, under section title "Entry into the Test Manager by Simulating a SCSI Device") comprising:

An adapter (Fig. 1, element 100 and Fig. 10) transmitting/receiving command or data to/from the initiator (e.g., the device requesting use of the bus, which can be the unit under test or the device driver apparatus) via the bus (Fig. 10) using a SCSI protocol (Fig. 10, elements 1070, 1010, and 660); and

A driver (Fig. 14, elements 1401, 1404, and 1405 and Fig. 15), which is located in the memory of the base unit, between the adapter (Fig. 1, element 100 and Fig. 10) and a PIO process simulating the I/O device, notifying one or more command and the data from said adapter, and also notifying said adapter of one or more of status and data from the PIO process. Note the adapter sits between the unit under test (UUT) and the device driver apparatus, so any status/command/data communication will be sensed by the adapter.

In reference to claim 2, Martin discloses the device driver apparatus according to claim 1, wherein the predetermined protocol is a SCSI protocol (Fig. 10, elements 1070, 1010, and 660).

In reference to claim 3, Martin discloses the device driver apparatus according to claim 1 or 2, wherein said adapter notifies said driver of the command from the initiator (Column 17, lines 38-44), said driver notifies the PIO process of the notified command, the PIO process returns status being a reply to said driver, said driver notifies said adapter of the status, and said adapter return the status to the initiator (Column 17, under section title "Entry into the Test Manager by Simulating a SCSI Device" for driver device apparatus, adapter, and initiator transactions).

In reference to claim 4 and 5, Martin discloses the device driver apparatus according to claim 1, wherein said adapter notifies said driver of the command from the initiator (Column 17, lines 38-44), said driver notifies the PIO process of the notified command, the PIO process returns a buffer address (Fig. 9, element 901, Address/Data lines) to said driver after processing the data (it is well known in the art storage and buffering transactions within CPUs using registers), and transmitting data and status to initiator (Fig. 910).

In reference to claim 7, Martin discloses the device driver apparatus according to claim 1, wherein the PIO process notifies said adapter of an error (Fig. 12b, element 1214), and said adapter or said driver makes the notified error occur (displayed on screen).

In reference to claim 8, Martin discloses the device driver apparatus according to claim 1, wherein the PIO process simulates an actual I/O device by transmitting/receiving status or data of a specified I/O device (see abstract).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of No. 5,440,697 to Boegel et al. (hereafter Boegel).

Martin discloses the device driver apparatus of claim 1.

Martin does not disclose expressly the PIO process simulating an error test of an I/O device where the error is actually induced, though he does disclose the simulation of common operations of an I/O device (for example, in a hard drive, simulating a partition and FAT (Column 10, lines 35-40).

Boegel discloses a diagnostic apparatus that simulates and forces errors to occur in an I/O device under test (see abstract).

Boegel and Martin are analogous art because they are from the problem solving area in I/O device diagnostic apparatuses.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Martin such that it forces error conditions to occur in the I/O device under test similar what Boegel claims.

The suggestion/motivation for doing so would have been to ensure reliability and performance in a complex I/O devices where errors are difficult to predict during device design and testbench implementation (Column 1, lines 15-30).

Therefore, it would have been obvious to combine Martin with Boegel for the benefit of reliability and performance in I/O devices thru diagnostic testing.

Allowable Subject Matter

6. Claim 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a apparatus of claim 1 wherein said driver is configured specifically by a low-order driver for said adapter, a high-order driver for the PIO process, and a medium-order driver transmitting/receiving a signal between the low-order driver and the high-order driver.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2182

The following patents are cited to further show the state of the art with respect to simulating and testing I/O devices:

U.S. Pat. No. 5,033,049 to Keener et al.

U.S. Pat. No. 5,442,305 to Martin et al.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S Chen whose telephone number is 703-605-0708. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.


JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 4100

asc
9/26/2003